IN THE CLAIMS

1. (Currently amended) A method of parallel data communication arrangement that is susceptible to skewing data which is concurrently transmitted in a plurality of multiple-bit groups, comprising:

receiving the concurrently-transmitted data in the plurality of multiple-bit groups; and after receiving the concurrently-transmitted data, realigning skew-caused misalignments between the groups;

wherein realigning skew-caused misalignments between the groups occurs after validating the received data and before further interpretation of the received data.

- 2. (Cancel)
- 3. (Original) The method of claim 1, further including controlling the skewing of the data in each group.
- 4. (Original) The method of claim 3, wherein controlling the skewing of the data in each group occurs independent of each other group.
- 5. (Original) The method of claim 1, further including transmitting, for each group, a clock signal used to synchronize the concurrently-transmitted data within each group.
- 6. (Original) The method of claim 1, further including transmitting a data-valid indicator and using the data-valid indicator to control the reception of the data in each group.
- 7. (Original) The method of claim 6, wherein transmitting the data-valid indicator is performed for each group of transmitted data.
- 8. (Original) The method of claim 7, further including coding the data into coded-data values before the data is concurrently transmitted in the plurality of multiple-bit groups and wherein the data-valid indicator is a unique coded-data value.

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- 9. (Original) The method of claim 7, further including transmitting at least one special bit for each group, and wherein the data-valid indicator is transmitted using the at least one special bit.
- 10. (Original) The method of claim 1, for each group further including: transmitting a synchronization clock signal and a data-valid indicator, receiving the transmitted data by sampling the data at the synchronization clock signal, and using the data-valid indicator to control the reception of the data in the group.
- 11. (Original) The method of claim 10, for each group further including: determining that the data-valid indicator indicates that valid data has been received and, in response, storing the received data before realigning skew-caused misalignments between the groups.
- 12. (Original) The method of claim 10, wherein storing the received data for each group includes storing the received data in a single-group FIFO buffer dedicated to the group, and wherein realigning skew-caused misalignments between the groups includes providing a group-global FIFO for storing data output from the respective single-group FIFOs.
- 13. (Original) The method of claim 1, wherein for each group, data is carried by a plurality of data-carrying lines that are synchronized by a differential clock signal to tolerate any skew-caused misalignments between data concurrently transferred in the group, the skew-caused misalignments not exceeding one half clock period.
- 14. (Original) The method of claim 1, further including coding the data from an 8-bit value to a 6-bit coded-data value for each group before the data is concurrently transmitted.
- 15. (Cancel).
- 16. (Original) A parallel data communication arrangement that is susceptible to skewing data which is concurrently transmitted in a plurality of multiple-bit groups, comprising.

- a receive circuit configured and arranged to receive the concurrently transmitted data in the plurality of multiple-bit groups; and
- a realignment circuit configured and arranged to realign skew-caused misalignments between the groups after receiving the concurrently-transmitted data; and

a sending module configured and arranged to concurrently transmit the data in the plurality of multiple-bit groups:

wherein realigning skew-caused misalignments between the groups occurs after validating the received data and before further interpretation of the received data.

- 17. (Cancel)
 - 18. (Cancel)
 - 19. (Original) The parallel data communication arrangement of claim 17, further including controlling the skewing of the data in each group.
 - 20. (Original) The parallel data communication arrangement of claim 19, wherein controlling the skewing of the data in each group occurs independent of each other group.
 - 21. (Original) The parallel data communication arrangement of claim 17, further including transmitting, for each group, a clock signal used to synchronize the concurrently-transmitted data within each group.
 - 22. (Original) The parallel data communication arrangement of claim 17, further including transmitting a data-valid indicator and using the data-valid indicator to control the reception of the data in each group.
 - 23. (Original) The parallel data communication arrangement of claim 22, wherein transmitting the data-valid indicator is performed for each group of transmitted data.

- 24. (Original) The parallel data communication arrangement of claim 23, further including coding the data into coded-data values before the data is concurrently transmitted in the plurality of multiple-bit groups and wherein the data-valid indicator is a unique coded-data value.
- 25. (Original) The parallel data communication arrangement of claim 23, further including transmitting at least one special bit for each group, and wherein the data-valid indicator is transmitted using the at least one special bit.
- 26. (Original) The parallel data communication arrangement of claim 17, for each group further including: transmitting a synchronization clock signal and a data-valid indicator, receiving the transmitted data by sampling the data at the synchronization clock signal, and using the data-valid indicator to control the reception of the data in the group.
- 27. (Original) The parallel data communication arrangement of claim 26, for each group further including: determining that the data-valid indicator indicates that valid data has been received and, in response, storing the received data before realigning skew-caused misalignments between the groups.
- 28. (Original) The parallel data communication arrangement of claim 26, wherein storing the received data for each group includes storing the received data in a single-group FIFO buffer dedicated to the group, and wherein realigning skew-caused misalignments between the groups includes providing a group-global FIFO for storing data output from the respective single-group FIFOs.
- 29. (Original) The parallel data communication arrangement of claim 17, wherein for each group, data is carried by a plurality of data-carrying lines that are synchronized by a differential clock signal to tolerate any skew-caused misalignments between data concurrently transferred in the group, the skew-caused misalignments not exceeding one half clock period.

- 30. (Original) The parallel data communication arrangement of claim 17, further including coding the data from an 8-bit value to a 6-bit coded-data value for each group before the data is concurrently transmitted.
- 31. (Original) A method of parallel data communication arrangement that is susceptible to skewing data which is concurrently transmitted in a plurality of multiple-bit groups, comprising:

in each of the plurality of multiple-bit groups, concurrently transmitting the data along with a synchronization clock signal and a data-valid indicator;

receiving the concurrently-transmitted data by sampling the data at the synchronization clock signal;

using the data-valid indicator to control the reception of the data in the group; and after using the data-valid indicator to control the reception of the data in the group, realigning skew-caused misalignments between the groups.

32. (Original) A parallel data communication arrangement that is susceptible to skewing data which is concurrently transmitted in a plurality of multiple-bit groups, comprising:

means for each of the plurality of multiple-bit groups, for concurrently transmitting the data along with a synchronization clock signal and a data-valid indicator;

means for receiving the concurrently-transmitted data by sampling the data at the synchronization clock signal;

means for using the data-valid indicator to control the reception of the data in the group; and

after using the data-valid indicator to control the reception of the data in the group, means for realigning skew-caused misalignments between the groups means.

33. (Original) A parallel data communication arrangement that is susceptible to skewing data which is concurrently transmitted in a plurality of multiple-bit groups, comprising:

a first module having a transmission circuit for each of the plurality of multiple-bit groups, each transmission circuit for concurrently transmitting the data along with a synchronization clock signal and a data-valid indicator;

a second module for, each group, receiving the concurrently-transmitted data by sampling the data at the synchronization clock signal, for using the data-valid indicator to control the reception of the data in the group, and after using the data-valid indicator to control the reception of the data in the group, for realigning skew-caused misalignments between the groups.

34. (Original) A method of parallel data communication arrangement that is susceptible to skewing data which is concurrently transmitted in a plurality of multiple-bit groups, comprising:

in each of the plurality of multiple-bit groups, concurrently transmitting the data along with a synchronization clock signal and a data-valid indicator;

in each of the plurality of multiple-bit groups,

receiving the concurrently-transmitted data by sampling the data at the synchronization clock signal,

using the data-valid indicator to control the reception of the data in the group, and

after using the data-valid indicator to control the reception of the data in the Jgroup, storing the received data in a single-group FIFO buffer; and realigning skew-caused misalignments between the groups including using a group-global FIFO buffer for storing data output from the respective single-group buffers and then interpreting the data in the group-global FIFO buffer.

35. (Original) A parallel data communication arrangement that is susceptible to skewing data which is concurrently transmitted in a plurality of multiple-bit groups, comprising:

means, in each of the plurality of multiple-bit groups, for concurrently transmitting the data along with a synchronization clock signal and a data-valid indicator; means, in each of the plurality of multiple-bit groups, for

receiving the concurrently-transmitted data by sampling the data at the synchronization clock signal,

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using the data-valid indicator to control the reception of the data in the group, and

after using the data-valid indicator to control the reception of the data in the group, storing the received data in a single-group FIFO buffer; and means for realigning skew-caused misalignments between the groups including using a group-global FIFO buffer for storing data output from the respective single-group buffers and then interpreting the data in the group-global FIFO buffer.

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